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AUTHOR Donovan, Bernadette; Iovino, Rose Marie
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ABSTRACT

Linking Multiple Intelligences theory and portfolio use is discussed. The question asked by Multiple Intelligences theory is: "In what ways is this person smart?" rather than "How smart is this person?" The portfolio compiler is forced to think about the ways particular intelligences are demonstrated or performed. Attempts to strengthen the bond between Multiple Intelligences theory and the use of portfolios for preservice teachers and their future students are supported by the fact that Gardner's theory has proven successful in curriculum and teaching methodology. Multiple Intelligences theory has been shown to be a good fit for portfolio development through journaling in Language Arts methodology classes. Measurement techniques have involved student teachers using the Multiple Intelligences Inventory for Adults to assess their personal intelligences, and then reflecting on their findings in Language Arts journals. Multiple Intelligences theory can also be used in portfolios for assessment to evaluate all students without the biases of using only standardized testing. In fact, it is possible to argue that Multiple Intelligences theory and portfolio process are opposite sides of the reflective thinking coin needed for academic improvement. At the present time, half of the student teachers at Molloy College (Rockville Center, New York) are using Multiple Intelligences theory as a framework for their portfolios. These preservice teachers have determined their multiple intelligences, reflected on them in journals in a Language Arts methodology course, and are now documenting in their portfolios evidence of translating this knowledge into effective learning experiences for students. Students in the other half are using the traditional framework of philosophical beliefs to demonstrate their competencies. Observations and data collection from these groups of student teachers will provide future directions for evaluating Multiple Intelligences portfolio use as authentic assessment of the student teaching experience. Handouts for the presentation are attached. (Contains 22 references.) (SLD)

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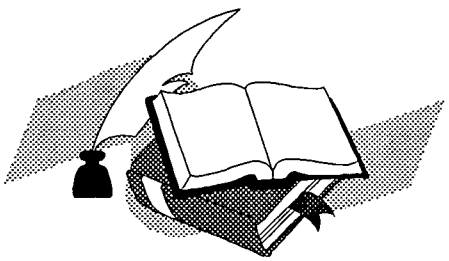
A "Multiple Intelligences" Approach to Expanding and Celebrating Teacher Portfolios and Student Portfolios



Bernadette Donovan, Ph.D.
Rose Marie Iovino, M.S.

Molloy College
Rockville Centre, NY

Paper presented at the annual meeting of the Northeastern Educational Research Association on Wednesday, October 21, 1997.

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Does Multiple Intelligences Portofolioing Improve Metacognition?

Portfolioing is not a new concept but rather one whose value has withstood academic debate over the past two decades. It is not the purpose of this paper, therefore, to question nor to prove the educational benefits of using portfolios in elementary and secondary classrooms, in pre-service teacher education programs and in the on-going professional development of educators; nor is it an attempt to provide a new format for portfolio development. Multiple Intelligences Portfolioing can be accomplished in the usual manner of hard copy folders or as more recently introduced in video or CD rom format.

Rather the linking of Multiple Intelligences Theory with portfolio development derives from what is the rationale and purpose of using portfolios. Howard Gardner emphasizes this point in "The Project Zero Classroom" (1996):

> Portfolios provide powerful and accessible models of thinking. They can "show" thinking in action... a portfolio culture cultivates metacognitive awareness through its emphasis on reflection.

"When students think about what they are learning in a creative and critical way, they understand it better. They even remember it better," claims David Perkins in Smart Schools: Better Thinking and Learning for Every Child (1992). The question asked by Multiple Intelligences theory namely: "In what ways is this person smart?" as opposed to "How smart is this person?" (Perkins, 1992) is rooted in reflection about oneself and about others. Labeling is not important nor as informative as noting the ways in which the student demonstrates these particular intelligences. The portfolio compiler is forced to reflect upon ways in which particular intelligences are demonstrated or performed. (Hatch, 1997).

Experiences in teacher education at Molloy College support this connection. Responses of student teachers to the portfolio process are as follows: "I have never worked so hard in my life. I have never evaluated nor analyzed my behavior in such depth." "Through photos and drawings, the reader can get a better idea of who I am," and finally, " I feel it is a good reflection of our personalities. I learned how much I can accomplish and how I can affect children."

This transition from personal reflection, the very core of portfolioing, to classroom application was adequately explained by John Dewey in 1933, long before collecting artifacts and documenting behavior was popular.

> The function of reflective thought is ...to transform a situation in which there is experienced obscurity, doubt, conflict, disturbance of some sort, into a situation that is clear, coherent, settled, harmonious. (Dewey, 1933)

Researchers at Harvard University in conjunction with researchers from Educational Testing Services using Arts Propel, a curriculum and assessment project, reported that students at any school age can reflect knowingly and those reflections underscore the significant metacognitive effort that students can bring to complex tasks and long-term projects: They conclude that it is this "reflection after the fact", this metacognitive stepping back from the problem solving that is important.

These written or spoken reflections do not interfere with classroom learning tasks; rather they provide the teacher and the students themselves with extremely valuable information about students' learning (Walters, 1994).

The encultration model of thinking and teaching proposed by Tishman, Jay, and Perkins (1993) is based upon metacognitive practices and fosters a culture of thinking in the classroom This is best achieved when students are exposed to examples of metacognition and provided with time for reflection. Multiple Intelligences Portfolioing engaged in jointly by students and teachers proves a steady rhythm of reflection and interactive practice which fosters metacognition.

Language Arts methodology courses which focus on whole language integration, involve reflective experiences. For this reason they provide a natural starting point for journaling and portofolioing. Conversely, in classrooms where whole language integration is superseded by a phonics approach, Multiple Intelligences reflective aspect provides the supplementary piece. Pre-service teachers who have engaged in Multiple Intelligences reflection in journaling and portfolioing are prepared to guide their students in responding to such questions as: " I like to reflect about myself when...," "It helps me to learn if I ...," "It is hard for me to evaluate myself...," "If I would change or have done one thing differently with this piece, I would have...," (Faculty of New City School 1994). These questions and the metacognitive process they involve require students to think about how they think and how they learn.

The completion of the Multiple Intelligences Inventory for Adults, as well as the checklist for assessing students' Multiple Intelligences, requires metacognitive reflection about how one thinks, i.e. interpersonally, intrapersonally, in terms of musical or linguistic experiences or in one or more of the other intelligences. As such it is a tool which strengthens metacognition.

Is Multiple Intelligences Portfolioing a Good Fit or Merely New Packaging?

Linda Campbell in Teaching and Learning through Multiple Intelligences (1996) explains in the section referring to journal writing that Gardner's theory holds that the personal intelligences are inextricably linked and that under ordinary circumstances neither can develop without the others. The author suggests using intrapersonal, reflective journal writing as a means to reveal the other intelligences. "Student journal writing can easily complement the goals of the teacher and help the student maintain a record of his/her progress."

In an informal survey of practices in schools in which Molloy College student teachers participate more than 90% of the cooperating teachers reported that they used journaling with their students. The same informal interviewing and observing yielded the information that no more than 15% were using portfolios either personally or with their students, and less than 5% were attempting application of Multiple Intelligences theory. No negative responses toward Multiple Intelligences theory were cited by classroom teachers. Rather they reported that time constraints did not permit their involvement in journal writing, portfolio compilation and the incorporation of Multiple Intelligences theory. Viewing these processes as three separate entities prohibited the additional

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expenditure of time in an already overcrowded curriculum. This soft data coupled with the fact that the Molloy College student teachers were knowledgeable about Multiple Intelligence theory and were engaged in both journal writing and portfolioing encouraged the exploration of the link which would make both processes more meaningful. In addition, it had become obvious through reviewing their completed portfolios, that some pre-service teachers had personally forged this link. Their portfolios revealed their emphasis on what they had determined to be their strongest intelligences. They described their past accomplishments and their future aspirations as teachers in terms of Multiple Intelligences theory.

Attempts to more directly strengthen the bond between Multiple Intelligences theory and portfolioing for pre-service teachers and their future students are supported by the fact that Gardner's theory has proven successful in curriculum and teaching methodology. Educators have used Multiple Intelligences theory to promote students' self directed learning, to raise the level of interactive discourse, and to involve students in worthwhile community projects (Campbell 1997). This latter application is derived specifically from Gardner's newly described eighth intelligence-naturalistic (Meyer1997).

The expansion of Multiple Intelligences theory, and its interconnectedness with reflective portfolioing, from pre-service teacher preparation to elementary and/or secondary classrooms, further advances the larger goal of total educational improvement . Writing in the Harvard Education Letter, in the article "How to Change Our Schools in Just One Day", Steve Seidel (1994) finds that it is important to examine the points of direct relationship between higher education and K-12 schools and to focus joint reform efforts at those points. "Admissions is one of those points. Teacher education is another: It is hard to ask others to change if your yourself aren't involved in the process in dramatic and visible ways." Citing personal experiences as well as documented evidences, Howard Gardner projects that the ultimate value of incorporating Multiple Intelligences theory is the total reform of teaching and learning. Multiple Intelligences is a strong partner in school reform (Gardner 1997).

In his suggestions about the contents of Multiple Intelligences Portfolios, Armstrong (1994) advocates that compilers develop "celebration portfolios" that include elements from several intelligences. Gardner (1991) describes this as a "process-folio" an effort to capture the phases through which students pass in the course of developing a project.

> I contend that creation and maintenance of a process-folio is an important, even essential phase in the development of a mature artistic practitioner in our culture.. If students observe their own teachers involved in projects, reflecting upon them, and keeping track of their own progress, such a model constitutes the most important lesson of all.

According to Seldin (1991), " Two important characteristics of a successful portfolio program: (are) 1) its integrative nature and 2) its interactive approach." Using Multiple Intelligences theory as the portfolio framework in which both teachers and students identify their common as well as their diverse intelligences allows for curriculum integration and personal interaction in that both are reflecting upon their experiences

within a common theory and yet each is operating out of one of his/her personal intelligences.

> In the past decade, portfolio development among reform-minded educators has often been limited to work requiring the linguistic and logical-mathematical intelligences (writing portfolios and math portfolios). Multiple Intelligences theory suggests, however, that portfolios ought to be expanded to include , when appropriate, materials from all seven intelligences (Armstrong 1994)

Writing about "The Schoolteacher's Portfolio: An Essay on Possibilities" in Methods of Evaluation (1994) Bird reports that, "Educational researchers and philosophers have shown repeatedly that it can be difficult to recall important aspects of school teaching." He suggests that, "Schoolteachers may find it somewhat easier to capture important aspects of this activity if they are provided some portfolio structure that suits the nature of their work." Multiple Intelligences theory provides just such framework in that it looks to specific activities to demonstrate how and in what ways intelligence is demonstrated.

Multiple Intelligences theory was shown to be a "good fit" for portfolio development through journaling in Language Arts methodology classes. Measurement techniques involved student teachers assessing their personal intelligences according to the MI Inventory for Adults (Armstrong 1994) and reflecting upon their findings in Language Arts journals. Samples revealed that: "Surprisingly my musical intelligence was higher than I thought it would be. I could possibly play classical music to calm my students after lunch and I could incorporate music when examining mood in stories."

"As a future educator, my high level of interpersonal intelligence will be a positive influence while working with others. On the other hand, I will need to develop my intrapersonal skills. Making independent decisions and being reflective will play a major role in teaching."

"I feel that all intelligences are important. People are usually measured by their 'book smarts' so I feel it is important to address other skills. I enjoyed taking the inventory because I got to look deeper inside myself. I also thought about how I could incorporate these skills into planning lessons and teaching."

"My students will keep personal journals with their thoughts and reflections on life. Their journals will help them to look back on things and see what they learned."

"I realized that as a teacher I must work hard at including all the intelligences in my lessons..."

Since student teachers were already involved compiling portfolios to document their progress as pre-service educators, the transition from journal entry to portfolio artifact was an easy one. The metacognitive intrapersonal intelligence involved in portfolioing is readily evident. Compilers are asked to review knowledge learned, link it

to previous knowledge and evaluate the results. According to Campbell (1997), several of the activities which are used in portfolioing rely strongly on Multiple Intelligences theory. As student teachers discovered their strongest intelligences as well as their least developed ones, it was a natural next step to the realization that their multiple intelligences would also be found in the students whom they would teach. The implications for teaching and learning were evident. Reflective excerpts from student teachers' portfolios evidence the support which Multiple Intelligence theory has provided.

"Participating in the Multiple Intelligences Inventory was a major learning experience for me. Because I personally am not especially strong in interpersonal intelligences, I must exert special effort to employ cooperative learning groups in my classes.

Ít is obvious that students are usually measured solely on their linguistic and logical/mathematical skills. I feel that it is important to address the other six intelligences as well in my teaching. Students can guide the way in which the teacher can incorporate all of the intelligences into learning experiences for them. They indicate through their actions and preferences which intelligences are most important for them."

"This inventory was a good measure of where my strengths and weaknesses lie. It is important to remember that although I possess a high linguistic intelligence, students in my classes may not. The information learned from these scores will definitely affect my teaching. Because I enjoy working with others, I tend to favor cooperative learning. Although I enjoy reading and writing, I will probably present lessons and engage in many activities focused on these areas. I must remember for foster other intelligences as well. There may be a child in my class who possesses a very high spatial or musical intelligence. Although I personally scored lowest in these areas, I must respect these other intelligences and utilize methods which would enhance them with my students."

"Based upon the scores obtained in my Multiple Intelligences Inventory, it is my belief that my teaching methodology will be explicit, personal, and strong in musical application. Throughout my life I have always visualized information in mind-pictures. In addition, I am good at giving and following directions. Because I scored high in both visual and spatial inteligences, I expect to be very explicit in my guidance of students. This will be especially beneficial in my teaching of children with exceptionalites."

"I believe that all areas of Multiple Intelligences must be strengthened especially the linguistic area because this is the basis of language arts and the vehicle through which most knowledge is acquired."

"The first thing that I would do as an educator is to observe my students. Observing how my students participate in various activities will allow me to assess how my students learn. I want to lean away from traditional, teacher-text lecture and assignments, and focus more on activities that will motivate my students to participate in the learning process. Students should always be engaged in hands-on activities that touch all areas of multiple intelligences. I hope to educate my students with the most effective

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strategies and implement techniques that will apply to all the intelligences of all my students."

To date many educational efforts have focused on Multiple Intelligences as directing curriculum and instruction. Its benefit as an assessment tool is derived from its performance based criteria. Multiple Intelligences theory which relies upon observable practices to indicate specific types of intelligences celebrates all students without the cultural and linguistic bias of using only standardized testing.

Does Multiple Intelligences Portfolioing Support Authentic Assessment?

According to Heidi Hays-Jacobs (1989), curriculum and assessment are opposite sides of the same coin. Using this same analogy it is possible to argue that Multiple Intelligences theory and portfolio process are opposite sides of the reflective thinking coin needed for academic improvement. According to Campbell (1996), assessment informs instruction..

Portfolio assessment is a method of assessment that does not require that all students attain the same level of proficiency in a particular skill or at the same time but rather enables teachers to work on students' different strengths and weaknesses on an individual basis without regard to where students may be in a particular skill in reference to other students. (Gellman 1993). It has been the observation of Harvard psychologist/educator, David Perkins (1992) that, "in classrooms that emphasize authentic assessment, little distinction appears between assessment and other activities. Students are assessed in terms of understanding and transfer, two principal concerns of the metacurriculum." Multiple Intelligences portfolioing facilitates this understanding and transfer by providing a framework which supports reflection about one's personal intelligences as they are demonstrated in all subjects throughout the curriculum. Having less of one type of intelligence than another is not necessarily as indictment but rather an honest self-assessment (Bird 1990). Multiple Intelligences portfolioing allows for this type of non condemnatory reflective evaluation which fosters academic growth.

Using Multiple Intelligence portfolioing with students opens another avenue for learning. Unlike most academic tasks in which only linguistic and logical/mathematical learning is rewarded, Multiple Intelligences porfolioing values the demonstration of each of the intelligences equally. According to Gardner (1991), Multiple Intelligences curriculum broadens assessment beyond tests of logical mathematical and linguistic ability, providing more opportunities for identifying students' strengths as well as offering avenues for more "intelligence-fair" assessment that draws upon the media and materials of different domains. Multiple Intelligences portfolios provide ways for students to discover through their work, their personal ways of thinking, preferred tools, strengths, and interests (Gardner 1996).

Multiple Intelligences portfolioing allows both teachers (including pre-service teachers) and students to use intrapersonal and interpersonal intelligences to arrive at mutual goals. "We usually find out about our weaknesses as teachers through student performance. Teachers use classroom-based problems to lead them through a systematic reflection process" (Langer 1996). Teachers gather artifacts such as journal entries and personal reflections about what they have learned from working with their students on

portfolios. Through discussing student portfolios they determine how their professional practice has improved. Pre-service teachers ask themselves: "How can I show what I have learned about teaching?" Students in their elementary and secondary classrooms are being asked, "How can you show me what you have learned about....?"

Assessing students' performance in light of their personal intelligences provides more comprehensive data for teachers when planning instruction which addresses all eight intelligences. It also provides additional assessment tools when reporting students' accomplishments to administrators and parents. Multiple Intelligences provides a theoretical framework for demonstrating different ways of learning and of showing progress in learning. Instructing and assessing within this framework allows a wider range of students to participate successfully in the teaching/learning experience.

When considering the authentic assessment component of Multiple Intelligences portfolioing, one cannot ignore the fact that statewide standards for learning are aimed at increasing knowledge of basic skills and follow traditional testing patterns. Yet, one Maryland elementary school reported that the incorporation of Multiple Intelligences in curriculum and assessment yielded improved performance on state tests and also created a school climate that values diversity, excellence, and achievement (Greenhawk 1997). Teachers from Washington state incorporated Gardner's theory with a focus on that state's essential learning requirements. They reported an increase in traditional scores through allowing students to choose their own types of assessments based upon their individual multiple intelligences, and then relating these demonstrations of learning to state requirements (Meyer 1977).

All definitions of alternative assessment share two essential features:

1. They are viewed as alternatives to multiple choice standardized tests.
2. They require direct examination of student performance on tasks that are significant and important for daily living. (Worthen 1993).

The types of assessments made possible through Multiple Intelligences theory fulfill both these requirements. Intelligences are defined as the ability to demonstrate or create that which is of value to at least one culture and are considered to be important for daily existence (Gardner 1996). Authentic assessment employs use of multiple assessments, focuses on divergent thinking and integrative application of learning, and relies on self-evaluation (Wiener 1997). The personal evaluation of intelligences, as well as the self-selection of portfolio artifacts which demonstrate those intelligences, integrate learning and assessment.

In most situations, teachers using Multiple Intelligences have designed their own rubrics to measure student achievement. Whatever assessment method is utilized, teachers have included tasks by which more than one intelligence is assessed (Hoerr 1997). Despite reported examples of successful evaluation practices, assessment remains the least explored area of Multiple Intelligence application-portfolioing is no exception. To assess the Multiple Intelligences Portfolios of student teachers, a statement of the compiler's knowledge of his/her personal intelligences is the assessment tool by which portfolio entries are "celebrated" through joint collaboration of the compiler, fellow student teachers, cooperating teachers and administrators from field schools and the education department faculty. For example, a student teacher who has discovered his/her strongest intelligences to be linguistic, spatial , and musical would be expected to evidence this in

reflective artifacts, lesson plans and thematic units. The realization that students in his/her future classroom will possess intelligences other than these would then lead him/her to include strategies which address those other intelligences which do not correspond exactly with his/her own multiple intelligences. This practical application of the teacher education experience yields information about the candidate more related to performance than any obtained from standardized testing.

Testimony from veteran professionals in the field attests to the ability of Gardner's theory to support both instruction and assessment. "Teaching to multiple intelligences helps one present materials in interesting ways and it lends itself to authentic assessment. I am surprised to see that I become a better teacher each year. By expanding my teaching and assessment strategies, I have energized both my students and myself' (Emig 1997).

Although the process of evaluating Multiple Intelligences portfolios presents the most challenging aspect of their development, less emphasis should be placed upon comparison and more on students' self-evaluation--an ipsative measure which compares a student, student/teacher, or teacher to his/her own performance (Armstrong 1997). This authentic assessment of performance based objectives then becomes the learning experience it was intended to be in which student and teacher celebrate their learning without judgment of traditional grading.

When asked in previous years, "What did you find to be of greatest benefit when compiling your personal portfolio?", 99% of the students surveyed responded that following guidelines and supporting a theme were second only to viewing models of completed portfolios. Students teachers' selecting a theme and then designing a portfolio which would support that theme had been incorporated into the portfolioing process over the past several years. When surveyed 100% of the education department faculty who advised student teachers in compiling their portfolios and who participated in the culminating celebration reported using a theme to be of greatest benefit. Having an identified and stated theme provided a framework upon which to build a record of interdisciplinary artifacts which portrayed effecting teaching techniques. It provided continuity and direction to the compilers' efforts. The next step was to utilize Multiple Intelligences theory which had been applied in journaling to the portfolio process and evaluate the results.

Presently, half of the student teachers at Molloy College are using Multiple Intelligences theory as a framework for their portfolios. These pre-service teachers having determined their multiple intelligences and engaged in reflective journaling about them in language arts methodology course are documenting in their portfolios evidence of translating this knowledge into effective learning experiences for students. Student teachers in the other group are using the traditional framework of philosophical beliefs about teaching and learning to demonstrate their competencies in content, instruction and classroom management. Ongoing observation and data collection from these two groups will provide future direction for evaluating Multiple Intelligences portfolioing as authentic assessment of the student teaching experience.

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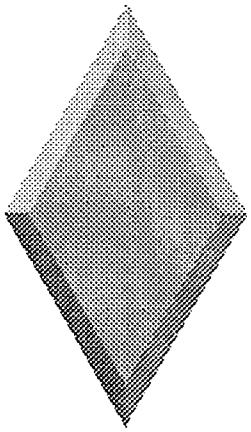

A "Multiple Intelligences" Approach to Expanding and Celebrating Teacher Portfolios and Student Portfolios

Presented by
Dr. Bernadette Donovan
Rose Marie Iovino, M.S.
Education Department
Molloy College
Rockville Centre, NY

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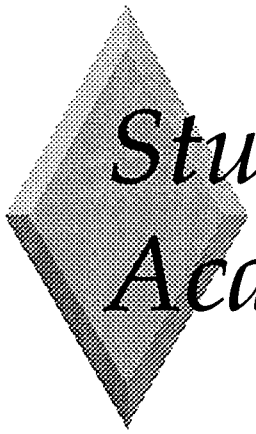

Student Reflection of Academic Growth

- What samples of your work did you review? When were the assignments completed?
- How has your work changed? What evidence do you have of such change?
- What did you learn that you didn't know previously?
- How have you used your new knowledge both in this class, in other classes and outside of school:
- Do the changes in your work affect how you see yourself as a mathematician, writer, artist, etc...?

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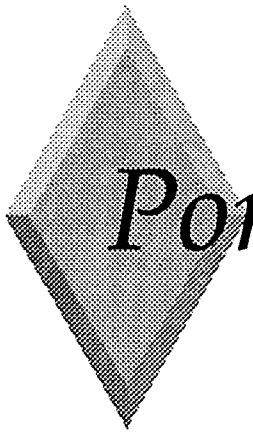

Portfolio Item Reflection

- Why did you select this sample from your portfolio for reflection?
- If you were to continue working on this selection, what would you add, delete, or change? Why?
- What would you like to research further because of what you have learned from this piece?

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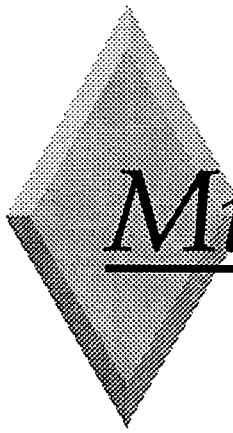
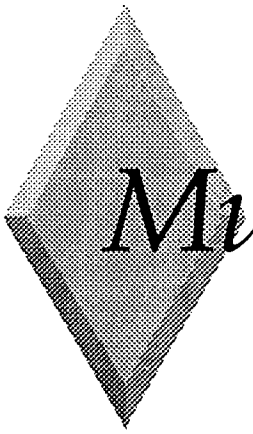


Multiple Intelligences

- Linguistic- communicate and make sense through language
- Logical Mathematical-use and appreciate abstract relations
- Spatial-perceive visual or spatial information, recreate visual images
- Bodily-Kinesthetic-use all or part of one's body to create products or solve problems



Multiple Intelligences

- Interpersonal-awareness of other's feelings, emotions
- Intrapersonal- awareness of one's own feelings, emotions
- Musical-pitch, rhythm, timbre
- Naturalistic-recognition and classifications of objects in the environment

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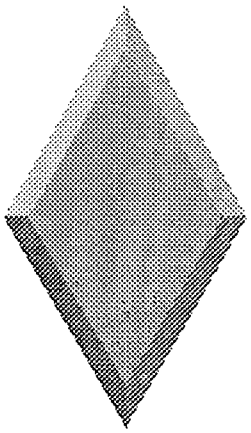
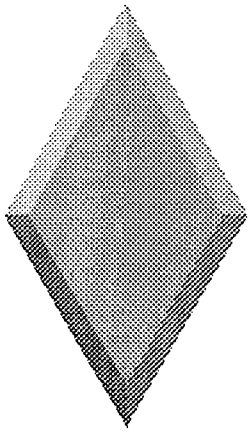


Does Multiple Intelligences Portfolioing Improve Metacognition?



Is Multiple Intelligences Portfolioing a Good Fit or Merely New Packaging?

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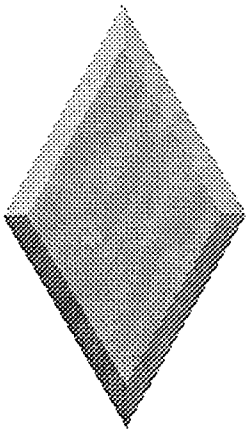

Does Multiple Intelligences Portfolioing Support Authentic Assessment?

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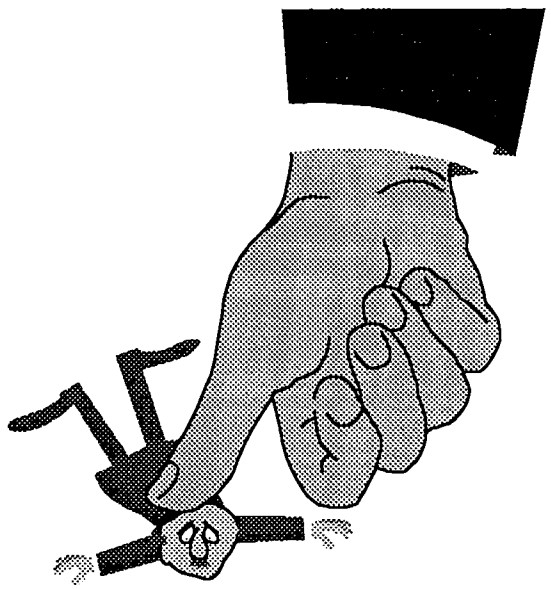
Experience +
Experience +
Experience = 0



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Experience + Reflection = Growth

TM

A "Multiple Intelligences" Approach to Expanding and Celebrating Teacher Portfolios and Student Portfolios

Presented by
Dr. Bernadette Donovan
Rose Marie Iovino, M.S.
Education Department
Molloy College
Rockville Centre, NY

Student Reflection of Academic Growth

- What samples of your work did you review? When were the assignments completed?
- How has your work changed? What evidence do you have of such change?
- What did you learn that you didn't know previously?
- How have you used your new knowledge both in this class, in other classes and outside of school:
- Do the changes in your work affect how you see yourself as a mathematician, writer, artist, etc...?

- Campbell, Linda. Teaching and learning through multiple intelligences.

Portfolio Item Reflection

- Why did you select this sample from your portfolio for reflection?
- If you were to continue working on this selection, what would you add, delete, or change? Why?
- What would you like to research further because of what you have learned from this piece?

- Campbell, Linda. Teaching and learning through multiple intelligences.

Multiple Intelligences

- Linguistic- communicate and make sense through language
- Logical Mathematical-use and appreciate abstract relations
- Spatial-perceive visual or spatial information, recreate visual images
- Bodily-Kinesthetic-use all or part of one's body to create products or solve problems

Multiple Intelligences

- Interpersonal-awareness of other's feelings, emotions
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Experience +
Experience +
Experience = 0

Experience +
Reflection = Growth

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A Multiple Intelligences approach to Expanding and Celebrating Teacher Portfolios and Student Portfolios

Bernadette Donovan and Rose Marie Iovino
Molloy College, Rockville Centre, New York

Abstract:

This discussion will begin with a brief review of the growth of the portfolio process in a teacher education program over the past five years citing specific adaptations and improvements. Documentation data includes evaluation and input from the college faculty, classroom teachers, administrators, and preservice teachers. The natural progression for compiling teachers' personal portfolios to effectively creating and using portfolios in the classroom will be discussed.

Because the portfolios are designed based upon four premises (1) portfolios document student learning over time; (2) all students are capable of learning; (3) Multiple Intelligences designed portfolios allow all students, including those with diverse needs, to show their progress in learning according to their specific intelligences; (4) portfolio creations must be viewed as a continuous means of assessing student progress involving both the student and the teacher; preservice teachers are encouraged to both model and implement the process. In order to accomplish this, an innovative approach to prepare student teachers to utilize "portfolio celebrations" with their students through Multiple Intelligences Journaling is scheduled into the curriculum methodology of the Integrated Language Arts course as well as being an integral part of the student teaching seminar. This approach incorporates Howard Gardner's theory of Multiple Intelligences as the central core of portfolio development thus ensuring that the specific intelligences of each child are addressed.

Attendees are encourage to share samples of teacher or student portfolios as well as information regarding experiences with portfolios.

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Signature: Bernadette Donovan
Rose Marie Iovino
Printed Name/Position/Title: BERNADETTE DONOVAN, Ph.D., PROFESSOR
ROSE MARIE IOVINO
Organization/Address: Molloy College Education Dept.
P.O. Box 5002
1000 Hempstead Ave.
Rockville Centre, NY 11571-5002
Telephone: 516-678-5000
FAX: 516-678-8908
E-Mail Address: donbeo1@molloy.EDU
Date: 11/18/97

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